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eaton, Derbyshire, by whom he has left a family. His death occurred on September 17, 1877, at Lacock Abbey.

CARL BREMIKER was born on February 23, 1804, at Hagen in the county of Mark. He at first was educated as a surveyor, and was engaged up to 1835 on the Rhenish-Westphalian survey. In 1835 he went to Berlin in order to devote himself to mathematical and astronomical studies, and with great success, as appears from the fact that he performed the calculations for the important appearance of Encke's Comet in 1838 with such care and accuracy that Encke asserted that more could not have been done. After Bremiker had graduated at the university he became a *collaborateur* on the *Berliner Jahrbuch*, and afterwards Inspector of the Plan Room in the Prussian Ministry of Trade. He proved his high interest in practical astronomy by the observations, continued during many years, that he made at his own residence. As a result of his labours should be mentioned his discovery of a comet on October 26, 1840, for whose orbit the observations gave a period of 344 years with great probability. He also there made the revisions and entries for five of the star charts of the Berlin Academy, which, with the corresponding catalogues, were presented to the Academy: Hora xvii. on December 9, 1839, Hora xiii. on December 6, 1841, Hora xxi. on December 9, 1844, Hora vi. at the end of 1852, and Hora ix. on May 26, 1858. It is well known that, in September 1846, the existence of a new planet beyond *Uranus*, announced by Leverrier, was at once verified by means of Bremiker's Star Chart, Hora xxi., which was lying for correction at the Berlin Observatory.

Bremiker performed a great service by the publication of tables of logarithms arranged in an extremely practical form, and which have found much favour. His *Logarithmorum vi decimalium Nova Tabula Berolinensis* appeared in 1852. In the very valuable introduction of 82 pages there are many important remarks upon the art of exact numerical calculation. In 1856 he issued a corresponding edition of Vega's seven-figure Table, and he also published subsequently four-figure and three-figure tables of logarithms, and finally, in 1872, a five-figure table of logarithms of trigonometrical functions, the degree being divided not into minutes, but into hundredths of a degree, to which are added Gaussian logarithms, a table of squares, &c.

He also published a new and remodelled edition of Crelle's well-known *Rechentafeln*, the whole table being contained in one volume, and in 1843 appeared his *Tafel der Proportionaltheile zum Gebrauche bei logarithmischen Rechnungen*. Since 1850 he edited the *Nautische Jahrbuch* for the use of the German Marine.

In 1868 Bremiker accepted the position of Departmental Director in the Royal Prussian Geodetical Institute, and he has consequently, in the last ten years, taken a very active part in

the works in connection with geodesy in Germany. He has also published some detailed theoretical investigations on this subject, viz. "Ueber die Projection der Land- und Himmelskarten," 1855 (*Astronomische Nachrichten*, No. 983); "Ueber Gradmessungen," 1856 (*Astronomische Nachrichten*, No. 1022); "Studien über Höhere Geodäsie" (1869).

Bremiker died, after a short illness, on March 26, 1877. He was elected an Associate of our Society on May 12, 1848. For the above account of Dr. Bremiker's life and works we are indebted to the kindness of Dr. Winnecke, Director of the Strassburg Observatory.

EDUARD HEIS was a native of Cologne, where he was born on the 18th of February 1806. He completed his education at the University of Bonn in 1827, in which year he became a teacher of mathematics and physics in the Friedrich Wilhelm Gymnasium at Cologne, where he resided during the succeeding ten years. His talents as a teacher having become known to the authorities of the High School at Aix-la-Chapelle, he was induced, in the year 1837, to accept the position of principal master for mathematics, physics, and chemistry in that school. Here he remained till 1852, to the advantage of those who came under his instruction, and his careful method of teaching made him popular among his pupils. It was while fulfilling his duties at this establishment that his acuteness of vision led him to undertake that long series of records of the relative brightness of the stars, as viewed with the unassisted eye, which formed the materials for that excellent and standard catalogue of stellar magnitudes contained in his *Atlas Cœlestis Novus*. During this period he also found ample opportunities for observing various other occasional celestial phenomena, especially of the zodiacal light, and of casual meteors, bolides, or the periodic recurrences of meteor showers. In 1852 Dr. Heis was transferred to Münster, in Westphalia, having received the appointment of Professor of Mathematics and Astronomy in the Royal Academy of that city. This office, in conjunction with that of Director of the Observatory, he retained to the end of his life.

Dr. Heis became known as a scientific writer soon after he completed his studies at the Bonn University. He employed his leisure hours between his ordinary scholastic duties at the Cologne Gymnasium chiefly in the study of botany, and his first published paper in 1828 was devoted to a botanical investigation "Ueber die Structur der Pflanzenzellen." Other papers relating to the same branch of science followed, and for some time this was evidently his chief recreative pursuit. He may possibly have taken an occasional interest in the appearance of irregular celestial phenomena, but we can find no record before 1833 bearing even slightly on his future astronomical eye-observations; and it is tolerably certain that at this time his thoughts were